

We claim:

- 1 1. A bidirectional bus repeater circuit, comprising:
2 a connector to a first segment of a bidirectional bus;
3 a connector to a second segment of a bidirectional bus; and
4 a pair of buffers for each bit on said bidirectional bus, each buffer in said pair
5 transferring data in a given direction on said bidirectional bus based on a direction control signal.
- 1 2. The repeater of claim 1, further comprising an additional pair of buffers associated
2 with a pair of indicator lines controlling said direction control signal.
- 3 3. The repeater of claim 1, further comprising a direction control block that controls
said direction control signal based on activity on an indicator line associated with said
bidirectional bus.
- 1 4. The repeater of claim 3, wherein a given node connected to said bidirectional bus
must toggle said indicator line in order to drive said bidirectional bus.
- 2 5. The repeater of claim 3, wherein a given node connected to said bidirectional bus
must toggle said indicator line in order to drive said bidirectional bus.
- 1 6. The repeater of claim 1, wherein said direction control signal is activated upon a
2 change of voltage on an indicator line associated with one of said segments of said bus to enable
3 said corresponding buffers.
- 1 7. The repeater of claim 6, wherein said direction control signal continues to enable
2 said corresponding buffers until the second of said bus segments reaches the same logic level as
3 the first of said bus segments.

- 1 8. A bidirectional bus, comprising:
2 a first segment connected to one or more nodes;
3 a second segment connected to one or more nodes; and
4 a bidirectional bus repeater having a pair of buffers for each bit on said
5 bidirectional bus, each buffer in said pair transferring data in a given direction on said
6 bidirectional bus based on a direction control signal.
- 1 9. The bidirectional bus of claim 8, wherein said bidirectional bus repeater further
2 comprises an additional pair of buffers associated with a pair of indicator lines controlling said
3 direction control signal.
- 1 10. The bidirectional bus of claim 8, wherein said bidirectional bus repeater further
2 comprises a direction control block that controls said direction control signal based on activity on
3 an indicator line associated with said bidirectional bus.
- 1 11. The bidirectional bus of claim 10, wherein a given node connected to said
2 bidirectional bus must toggle said indicator line in order to drive said bidirectional bus.
- 1 12. A method for repeating a signal on a bidirectional bus, comprising the steps of:
2 connecting two segments of said bidirectional bus;
3 providing a pair of buffers for each bit on said bidirectional bus; and
4 transferring a bit of data in a given direction through one of said pair of buffers
5 based on a direction control signal.
- 1 13. The method of claim 12, wherein said bidirectional bus comprises an additional
2 pair of buffers associated with a pair of indicator lines controlling said direction control signal.
- 1 14. The method of claim 12, wherein a direction control block controls said direction
2 control signal based on activity on an indicator line associated with said bidirectional bus.

1 15. The method of claim 12, wherein a given node connected to said bidirectional bus
2 must toggle said indicator line in order to drive said bidirectional bus.